

Use the same type of breakaway device throughout the entire project. All breakaway devices shall be FHWA approved. Include in the device protection for wiring and conduit at the base of the standard, in the form of a special heavy-formed material secured in place.

#### 1404-3 CONSTRUCTION METHODS

Locate and number the light standards as shown in the plans.

Do not lay the standards on the ground without proper blocking and protection to prevent warping and discoloration. Protect the standards from damage by other construction work, including landscape mulching and fertilizing operations.

Securely mount the standards on the anchor bolts, and plumb up with nuts torqued according to the manufacturer's recommendation.

Mounting height is defined as vertical distance from luminaire to surface of pavement of heaviest traveled lane in area illuminated by the luminaire. A tolerance of  $\pm 1.5$  ft from the required mounting height will be permitted. If this tolerance is exceeded, furnish and install an acceptable standard within this tolerance.

#### 1404-4 MEASUREMENT AND PAYMENT

*Light Standards*, \_\_\_\_ will be measured and paid as the actual number of light standards with arm assemblies of each appropriate mounting height and bracket arm type and length installed and accepted.

Payment will be made under:

Pay Item	Pay Unit
Light Standards, ____	Each

### SECTION 1405 STANDARD FOUNDATION

#### 1405-1 DESCRIPTION

Furnish and install all materials necessary to construct concrete foundations for light standards, including concrete, reinforcing steel, anchor bolts, nuts, forms, excavation and backfilling.

#### 1405-2 MATERIALS

Refer to Division 10.

Item	Section
Conduit	1400-2(B)
Metal Shroud	1400-4(I)
Portland Cement Concrete, Class A	1000
Reinforcing Steel	1070

Provide Type 3 material certifications in accordance with Article 106-3 for conduit and anchor bolt assemblies. Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store foundation and anchor bolt assembly materials so materials are kept clean and free of damage.

## Section 1405

Provide anchor bolt assemblies in accordance with *Roadway Standard Drawings* No. 1405.01 consisting of the following:

(A) Straight anchor bolts or anchor bolts with hooks;

(B) Heavy hex nuts, leveling nuts, flat washers and lock washers on exposed ends of bolts; and

(C) Nuts and flat bars on the other ends of straight anchor bolts embedded in concrete.

Use steel anchor bolts, nuts and flat washers that meet ASTM F1554 for Grade 55 bolts and Grade A nuts. Provide steel lock washers. Galvanize anchor bolts and exposed nuts and washers in accordance with Article 1076-4. It is not necessary to galvanize nuts and bars embedded in concrete.

### 1405-3 CONSTRUCTION METHODS

The foundation design shown in the plans is based upon placing foundations into undisturbed soil or fill of at least medium density. The Engineer will stake each location and determine the top of foundation elevation unless indicated differently elsewhere in the Specifications. The foundation type and depth will be determined by the plan details in accordance with the final soil and slope conditions at each location. Set anchor bolts in accordance with stub height requirements on the *Roadway Standard Drawings* No. 1405.01.

Pour the concrete for the pedestal portion monolithic with the barrier portion on light standard foundations that are an integral part of a barrier. Construct the barrier portion as specified in the contract and continuous through the foundation. Coordinate construction of foundations in median barrier with the signing plans to avoid conflict with overhead sign structure foundations.

Where rock creates a conflict with construction of the standard foundations, an alternate foundation may be constructed if approved.

Install aground rod adjacent to the light standard foundation and permanently attach grounding conductor from standard.

### 1405-4 MEASUREMENT AND PAYMENT

*Standard Foundation* \_\_\_\_ will be measured and paid as the actual number of foundations for each appropriate height and type of standard, completed and accepted.

The quantity of bedrock foundations to be paid will be the actual number of alternate foundations for bedrock locations for standards of the appropriate type, installed and accepted.

Alternate foundations for rock locations will be paid at 1.5 times the contract unit price each for *Standard Foundations*, \_\_\_\_ of the appropriate type that would have been installed if rock had not been encountered.

The requirements of Article 104-5, which pertain to adjustments in contract unit prices for overrunning or underrunning pay items, will not be applicable to pay items covered by this section.

Payment will be made under:

Pay Item	Pay Unit
Standard Foundation, ____	Each